

### **ABSTRACT OF THE DISCLOSURE**

A lipid assay method, kit, and apparatus involving exposure of a protein, having a lipid recognition motif that interacts with a target lipid and a competing lipid, to a solution containing the competing lipid, and determining whether the target lipid is present in the solution. The target lipid has a stronger affinity to the lipid recognition motif than does the competing lipid. The lipid recognition motif is preferably a pleckstrin homology (PH) domain, with the target lipid being a phosphoinositide. The assay determines activity of a lipid kinase, the target lipid being a phosphorylation product of a reaction between the lipid kinase and a substrate lipid. The assay can be a cancer screening method for detection of cancer cells, where detection of certain levels of a PI(3,4,5)P<sub>3</sub> target lipid is an indicator of a cancer cell.